AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method of subjecting a glass preform to processing by tensile forces in a furnace to produce a glass product of predetermined shape, said method comprising

- introducing at least a part of the glass preform into the furnace through an inlet opening,
- heating a portion of the glass preform introduced into the furnace to a temperature above ~~the~~a softening point of the ~~glass~~ preform,
- subjecting the heated portion of the glass preform to tensile forces in a drawing direction to process the preform into the predetermined shape,
- drawing the portion of the preform which has been processed into the predetermined shape ~~is~~ from the furnace through an outlet opening, and
- flushing the heated portion of the preform and at least a part of the processed portion of the preform in the furnace with inert gas which is being fed into the furnace, characterized by
- maintaining a concentration of gaseous impurities in the furnace essentially the same as a concentration of the same impurities in the inert gas fed into the furnace,
- establishing a diffusion barrier against an inflow of impurities from the ambient air, driven by diffusion, by generating a barrier flow of inert gas in at least one opening selected from said inlet opening and said outlet opening of the furnace, said barrier flow

having a direction of flow, which is generally opposite to the ~~direction~~ inflow of the impurities.

2. (original): The method according to claim 1, wherein the furnace comprises an elongated furnace chamber having a vertical central axis, said diffusion barrier being established in the inlet opening, which is located in the upper end of the elongated furnace chamber.

3. (currently amended): The method according to claim 1, wherein the diffusion barrier is established in the inlet opening ~~of the glass preform, in the inlet opening of the~~, in the inert gas feed and in the outlet opening of the ~~processed preform~~ furnace.

4. (currently amended): The method according to claim 2, wherein there is gas flow through the inlet opening, which flow corresponds to the equation (2)

$$F1=F*C1/(C1+C2) \qquad (2)$$

wherein

F1 stands for the protective gas flow through the inlet opening,

F stands for the total gas flow that is fed into furnace,

C1 stands for a conductance of the inlet opening and

C2 stands for a conductance of the outlet opening.

5. (previously presented): The method according to claim 4, wherein the each of the conductances C1 and C2 are calculated from the equation (3)

$$C=K*W*H^3/L, \qquad (3)$$

wherein

C stands for conductance,

K is a constant at low pressure differences,

W is the width of the opening,

H is the height of the opening, and

L is the length of the opening.

6. (currently amended): The method according to claim 1, wherein ~~there is a~~ the flow of inert gas ~~through the outlet opening, which~~ is introduced into the outlet opening, the flow being is at least equal to the flow of gas caused by a chimney effect through the inlet opening, preventing unwanted suction of ambient air into furnace through outlet opening due to chimney effect.

7. (currently amended): The method according to claim 6, wherein the flow of inert gas into the furnace is sufficient still to form, based on the gas ~~distribution~~flow according to equation (2), a diffusion barrier at the outlet opening of the ~~processed perform~~ furnace; wherein equation (2) has the formula:

$$F1=F*C1/(C1+C2+C3) \qquad (2)$$

wherein

F1 stands for the protective gas flow through the inlet opening,

F stands for the total gas flow,

C1 stands for a conductance of the inlet opening and

C2 stands for a conductance of the outlet opening,

C3 stands for ~~the purge of flow of the intermittent space~~ a combined conductance of flow routes from furnace to ambient space other than inlet opening or outlet opening.

8. (original): The method according to claim 7, wherein the outlet opening will allow for more free flow of gas than the inlet opening to direct most of the inert gas flow fed into the furnace through the outlet opening.

9. (previously presented): The method according to claim 3, wherein the conductance of the outlet opening is greater than the conductance of the inlet opening.

10. (currently amended): The method according to claim [[1]] 6, wherein the inert gas fed into the furnace is equal to or greater than the flow of gas caused by the chimney effect + 1 SLM, in particular chimney effect + 5 SLM.

11. (currently amended): The method according to claim 1, wherein the glass preform is subjected to tensile drawing in order to stretch the preform ~~into a shape suitable~~ for post-processing ~~like drawing of optical fibres~~.

12. (previously presented): The method according to claim 1, wherein the glass preform is subjected to drawing of optical fibre.

13. (currently amended): The method according to claim 12, wherein ~~the~~ a clearance distance between an exterior diameter of the glass preform and an inlet opening diameter is between 0.1 – 10 mm for an 80 mm preform.

14. (currently amended): The method according to claim 12, wherein ~~there is a~~the barrier flow is along a barrier distance of 0.5 to 100 mm.

15. (previously presented): The method according to claim 1, wherein the furnace comprises a graphite induction furnace.

16. (previously presented): The method according to claim 1, comprising rotating the glass preform about its central axis during said heating in the furnace.

17. (withdrawn): An apparatus for heating of glass performs which are processed by tensile forces into a glass product of predetermined shape, comprising

- a furnace body having a jacket defining an elongated furnace chamber with an at least essentially circular cross-section perpendicular to the central axis of the chamber,
- a first opening at one end of the chamber for receiving one end of a glass preform, which is to be processed,

– a second opening at an opposite end of the chamber for withdrawal of the processed glass product,

– graphite heating resistances mounted to the furnace chamber to provide for induction heating of the glass preform in the furnace, and

– feed nozzles connected to at least the first opening of the chamber for introducing protective gas into the furnace chamber,

characterized by

– a first diffusion barrier zone at the first opening for preventing inflow of impurities from the ambient air, driven by diffusion, into the furnace chamber during heating of the glass preform.

18. (withdrawn): The apparatus according to claim 17, wherein there is a second diffusion barrier zone at the second opening of the furnace chamber.

19. (withdrawn): The apparatus according to claim 17, wherein a nozzle for feed of protective gas is connected to both the first and the second openings and, optionally, also to an opening formed in the jacket of the furnace chamber at a point between the first and the second openings.

20. (withdrawn): The apparatus according to claim 17, wherein the apparatus is adapted for heating of a glass preform subjected to drawing of optical fibre.

21. (withdrawn): The apparatus according to claim 20, wherein the clearing between the exterior diameter of the glass preform and the first opening diameter is 0.1 – 10 mm for an 80 mm preform.

22. (withdrawn): The apparatus according to claim 21, wherein the each barrier zone comprises a length of the furnace chamber amounting to 0.5 to 100 mm, along which a barrier flow of protective gas can be arranged.

23. (withdrawn): The apparatus according to claim 17, wherein the barrier zone comprises a zone of essentially laminar gas flow.

24. (withdrawn): The apparatus according to claim 23, wherein the barrier zone is formed above the feed nozzles of the protective gas.

25. (withdrawn): The apparatus according to claim 17, wherein the barrier zone is defined by the clearance between a glass preform and the opening of the furnace.

26. (withdrawn): The apparatus according to claim 25, wherein the difference between the external diameter of the glass preform and inner diameter of the opening is in the range of 0.5 to 15 mm.

27. (withdrawn): The apparatus according to claim 23, wherein the barrier zone has a length parallel to the central axis of the furnace tube amounting to about 10 to 1000 mm, preferably about 15 to 150 mm.

28. (withdrawn): A process for heat-treatment of glass substrates, in which method the glass substrate is placed in a first gas space of a heat treatment zone, surrounded by a second, ambient gas space, said heat treatment zone being provided with at least one gas conduit interconnecting the first and the second gas spaces, characterized by forming a diffusion barrier in the at least one gas conduit interconnecting the gas space inside the heat treatment device with the ambient atmosphere to seal off the conduit against flow of gas in at least one direction through the conduit.

29. (withdrawn): The process according to claim 28, comprising establishing a diffusion barrier against the inflow or outflow of impurities from or to the ambient air, driven by the forces of diffusion, by generating a barrier flow of inert gas in at least one said gas conduit, said barrier flow having a direction of flow, which is generally opposite to the direction of the diffusion.

30. (withdrawn): The process according to claim 28, comprising establishing a diffusion barrier in each of the gas conduits interconnecting the first and the second gas spaces.

31. (withdrawn): The process according to claim 28, wherein the heat treatment comprises preform processing by Modified Chemical Vapour Deposition in an MCVD lathe.

32. (withdrawn): The process according to claim 28, wherein the heat treatment comprises preform processing in a sintering furnace.

33. (withdrawn): The process according to claim 28, wherein the diffusion barrier is established at a gas conduit comprising a rotary joint.

34. (withdrawn): The process according to claim 33, wherein the rotary joint is a non-contacting joint.

35. (new): The process according to claim 1, wherein the barrier flow of inert gas is laminar.